

SEQUENCE LISTING
Att 24/F

(1) GENERAL INFORMATION:

- (i) APPLICANT: SHUBER, ANTHONY P.
- (ii) TITLE OF INVENTION: UNIVERSAL PRIMER SEQUENCE FOR MULTIPLEX DNA AMPLIFICATION
- (iii) NUMBER OF SEQUENCES: 65
- T180X
- (iv) CORRESPONDENCE ADDRESS:
 (A) ADDRESSEE: RAE-VENTER LAW GROUP
 (B) STREET: 260 Sheridan Ave., Ste. 440
 (C) CITY: Palo Alto
 (D) STATE: California
 (E) COUNTRY: USA
 (F) ZIP: 94306
- (v) COMPUTER READABLE FORM:
 (A) MEDIUM TYPE: Floppy disk
 (B) COMPUTER: IBM PC compatible
 (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:
 (A) APPLICATION NUMBER: 08/474,450
 (B) FILING DATE: 7-JUNE-1995
 (C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:
 (A) NAME: Rae-Venter, Barbara
 (B) REGISTRATION NUMBER: 32,750
 (C) REFERENCE/DOCKET NUMBER: GECO.001.00US
- (ix) TELECOMMUNICATION INFORMATION:
 (A) TELEPHONE: (650) 328-4400
 (B) TELEFAX: (650) 328-4477

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 21 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - int19"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

AGGCTTCTCA GTGATCTGTT G

21

(2) INFORMATION FOR SEQ ID NO:2:

18

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - int19"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

GAATCATTCA GTGGGTATAA GCAG

24

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 19"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GCCCGACAAA TAACCAAGTG A

21

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 19"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

AGTCTAACAA AGCAAGCAGT G

21

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid

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- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 21"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

TGATGGTAAG TACATGGGTG

20

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 21"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

CAAAAGTACC TGTTGCTCCA

20

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 9"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

CTTCTAATGG TGATGACAGC CT

22

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

20

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(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 9"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

CCACTGAAAA TAATATGAGG AAAT

24

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 13"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

AGGTAGCAGC TATTTTATG G

21

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 13"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

TAAGGGAGTC TTTTGACAA

20

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 4"

21

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

TGTAGGAAGT CACCAAAG

18

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 4"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

CGATACAGAA TATATGTGCC

20

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 17b"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

GGAGTCCAAT TTTCACTCAT .CTTG

24

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 25 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 17b"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

22

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AGTTAATGAG TTCATAGTAC CTGTT

25

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

AGATACTTCA ATAGCTCAGC C

21

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

GGTACATTAC CTGTATTTG TTT

23

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 11"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

CAGATTGAGC ATACTAAAAG TG

22

(2) INFORMATION FOR SEQ ID NO:18:

23

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 22 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 11"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

TACATGAATG ACATTACAG CA

22

(2) INFORMATION FOR SEQ ID NO:19:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 10"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

GAGCCTTCAG AGGGTAAAT

20

(2) INFORMATION FOR SEQ ID NO:20:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 10"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

TCACATAGTT TCTTACCTCT

20

(2) INFORMATION FOR SEQ ID NO:21:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

24

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 20"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

AAGAACTGGA TCAGGGAAAGA

20

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 20"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

TCCTTTGCT CACCTGTGGT

20

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
 SEQUENCE - exon 5"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

GCTGTCAAGC CGTGTCTA

19

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 23 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER

25

SEQUENCE - exon 5"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

GTATAATTAA TAACAATAGT GCC

23

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 14b"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

TTGGTTGTGC TGTGGCTCCT

20

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 22 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 14b"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

ACAATACATA CAAACATAGT GG

22

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 12"

26

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

GACTCTCCTT TTGGATACCT A

21

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 12"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

GCATGAGCAT TATAAGTAAG G

21

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 3"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

GGCGATGTTT TTTCTGGAGA

20

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "CFTR 15-PLEX PRIMER
SEQUENCE - exon 3"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

ACAAATGAGA TCCTTACCCC

20

27

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(2) INFORMATION FOR SEQ ID NO:31:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 23 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR EXON 21 PRIMER
 SEQUENCE - SS#1"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

CAAGTGAATC CTGAGCGTGA TTT

23

(2) INFORMATION FOR SEQ ID NO:32:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR EXON 21 PRIMER
 SEQUENCE - SS#1"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

CAAAAGTACC TGTTGCTCCA

20

(2) INFORMATION FOR SEQ ID NO:33:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 25 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR EXON 21 PRIMER
 SEQUENCE - SS#2"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

GAACTTGATG GTAAGTACAT GGGTG

25

(2) INFORMATION FOR SEQ ID NO:34:

- (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR EXON 21 PRIMER
 SEQUENCE - SS#2"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

AGTCAAAAGT ACCTGTTGCT CCAG

24

(2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR EXON 21 PRIMER
 SEQUENCE -SS#3"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

TGATGGTAAG TACATGGGTG

20

(2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "CFTR EXON 21 PRIMER
 SEQUENCE - SS#3"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

CAAAAGTACC TGTTGCTCCA

20

(2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "GCR 4-PLEX PRIMER SEQUENCE
 - exon 6"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

GGGTGGGAGG GTGGAGGCTA ATGG

24

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "GCR 4-PLEX PRIMER SEQUENCE
 - exon 6"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

CCAGAAGGTA GAAAGGTGAG

20

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 19 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "GCR 4-PLEX PRIMER SEQUENCE
 - exon 2"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

GAATGTCCCCA AGCCTTTGA

19

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 20 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "GCR 4-PLEX PRIMER SEQUENCE
 - exon 2"

30

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

AAGCTGAAGC AAGAGAATCG

20

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "GCR 4-PLEX PRIMER SEQUENCE
- exon 9"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

TGCAACTACT GAGGCACCTT

19

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "GCR 4-PLEX PRIMER SEQUENCE
- exon 9"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

TACAATGATG GGACTGTGCG

19

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "SCA 4-PLEX PRIMER SEQUENCE
- exon 9"

31

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

CATTTGCTTC TGACACAACT G

21

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 21 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "SCA 4-PLEX PRIMER SEQUENCE
- exon 9"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

CCAACCTTCAT CCACGTTCAC C

21

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "GCR 3-PLEX PRIMER SEQUENCE
- exons 9, 10, 11"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

CCTTGCCCTG AACCCCGAA

19

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 24 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "GCR 3-PLEX PRIMER SEQUENCE
- exons 9, 10, 11"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

CTGACTCTGT CCCTTTAATG CCCA

24

32

(2) INFORMATION FOR SEQ ID NO:47:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 21 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "TS 3-PLEX PRIMER SEQUENCE - exons 11, 12"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

GTGTGGCGAG AGGATATTCC A

21

(2) INFORMATION FOR SEQ ID NO:48:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 21 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "TS 3-PLEX PRIMER SEQUENCE - exons 11, 12"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

TGGCTAGATG GGATTGGGTC T

21

(2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 24 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(iii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "TS 3-PLEX PRIMER SEQUENCE - exon 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

GGGTCTTACA ACCCTGTCAC CCAC

24

(2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 24 base pairs

33

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- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "TS 3-PLEX PRIMER SEQUENCE - exon 7"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

AAGCTTCACT CTGAGCATAA CAAG

24

(2) INFORMATION FOR SEQ ID NO:51:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "B-THALASSEMIA PRIMER SEQUENCE - exons 1, 2, 3"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

GCTGTCATCA CTTAGACCTC

20

(2) INFORMATION FOR SEQ ID NO:52:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "B-THALASSEMIA PRIMER SEQUENCE - exons 1, 2, 3"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

GCAAGAAAGC GAGCTTAGTG

20

(2) INFORMATION FOR SEQ ID NO:53:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 18 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

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(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - B"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

CTGAGTGAAT GGAGCGGC

18

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - B"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

GGGTGAATGA GTAGGTGG

18

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 17 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - F"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

CGGTGCTGGA CTTTGCG

17

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 18 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - F"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

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AAGTGGACAG TGAAGGCG

18

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - H"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

CCGTCTTGCG AGAGCACC

18

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - H"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

CTAATTTGCT GTGGGTTAGG

20

(2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - J"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

AGTTGTGTAT ATTTGTGGTT ATG

23

(2) INFORMATION FOR SEQ ID NO:60:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 20 base pairs

- (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - J"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

GTTACTGTGG AAAGGCAATG

20

(2) INFORMATION FOR SEQ ID NO:61:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - N"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

GAGATCCCC TTTCCAG

17

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 17 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - N"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

CACAGCTGCC AGCAATG

17

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 18 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: other nucleic acid
 (A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - O"

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

CTCACTGTGC CCACATTG

18

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "WT-1 PRIMER SEQUENCE - 0"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

CAATTCATT CCACAATAG

19

(2) INFORMATION FOR SEQ ID NO:65:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 20 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

(A) DESCRIPTION: /desc = "Oligonucleotide primer"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

GCGGTCCCAA AAGGGTCAGT

20

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